Gorst Creek-Bremerton Auto Wrecking Landfill

Background:

This site is located about 1.5 miles west of Gorst, Washington and about 5 miles to the southwest of Port Orchard, Washington along Highway 3 SW.

The landfill began operations in 1950 and was closed in 1989 by the Kitsap County Health Department due to non-conformance with state and local solid waste regulations. Between 1950 and 1968, the landfill actively received wastes with no permits. Wastes were received from a variety of sources, including the Puget Sound Naval Shipyard. The landfill was first permitted for operations in 1968. It contains approximately 150,000 cubic yards of waste material. The landfill is not contained to control potential leaching into the groundwater or capped to prevent migration of contamination via overland flow from flooding. The Washington Department of Ecology has had minimal involvement with this site.

This landfill is situated in a ravine over Gorst Creek. A corrugated steel culvert (24" in diameter) was constructed to allow the creek to flow through the landfill. The ravine is now filled with waste and is covered with a thin layer of soil. During heavy rainfall the water backs up behind the landfill to depths of greater than 30 feet. During especially heavy rainfall events, the creek floods over the surface of the landfill which causes the northwest portion of the landfill to fail and wash into Gorst Creek.

EPA Preliminary Assessment/Integrated Assessment:

EPA conducted a Preliminary Assessment in 2003 and an Integrated Assessment (IA) in June 2004. During the IA, subsurface samples were collected from six boreholes drilled directly into the landfill. Six surface soil samples were also collected at the same locations as the boreholes. Five sediment samples were collected from Gorst Creek downstream of the landfill. A summary of the sampling results are listed on the table below.

As part of the IA, a mobile camera was deployed into the culvert underneath the closed landfill to identify potential causes for the backup of the creek behind the landfill. Based on the video from the remote camera, approximately 450 feet upgradient from the point of the culvert outflow, the culvert appeared to be crushed and only a limited amount of water was able to pass through the culvert.

The primary pathway of concern is the surface water pathway. Gorst Creek flows 3.72 miles before entering Puget Sound at Sinclair Inlet. Primary targets include a tribal fishery located about 2.72 miles downstream of the site as well as recreational fisheries in Puget Sound. There are also a number of endangered species that are found within the Target Distance Limit (TDL). These include Chum and Chinook Salmon which use Gorst Creek for spawning and the bald eagle is known to nest within four miles of the site. Wetlands are also present within the TDL.

Sampling Results:

Surface Soils: six samples at same location as soil borings

Compound	Concentration	Region 6 PRGs Resid./industrial	Freq. of detection
DDT	4.9 – 54 JH ug/kg	1700/7800 ug/kg	4 of 6
Arochlor 1254	50 J -88 J ug/mg	220/2900 ug/kg	2 of 6
Benzo(a)pyrene	70J ug/mg	15/230 ug/kg	1 of 6
Benzo(a)anthracene	73J ug/mg	150/2300 ug/kg	1 of 6
Lead	9.6 – 278 mg/kg	400/800 mg/kg	6 of 6
Mercury	.19 - .62 mg/kg	23/610 mg/kg	2 of 6

Subsurface Soils: six borings

Compound	Concentration	Region 6 PRGs Resid./industrial	Freq. of detection
DDT	6.9 to 43 ug/mg (70J)	1700/7800 ug/kg	5 of 6
DDE	7.5 – 40 ug/mg	1700/7800 ug/kg	5 of 6
Arochlor 1254	65-280 ug/mg (370 J)	220/2900 ug/kg	5 of 6
Benzo(a)pyrene	55 J– 490J ug/mg	15/230 ug/kg	6 of 6
Benzo(a)anthracene	43J- 2000J ug/mg	150/2300 ug/kg	5 of 6
Lead	2.5 - 1410 mg/kg	400/800 mg/kg	6 of 6
Mercury	0.13 -1.1 mg/kg	23/610 mg/kg	3 of 6

Sediments: three downstream samples

Compound	Concentration	NOAA SQIRT (PEL)	Freq. of detection (downstream samples)
DDT	88J ug/mg – 340J ug/mg	50 ug/mg (UEL)	2 of 3
DDE	33J ug/mg – 110J ug/mg	8.51 ug/mg	2 of 3
Arochlor 1254	750J ug/mg – 2500J ug/mg	277 ug/mg	2 of 3
Copper	201 mg/kg	197 mg/kg	1 of 3
Lead	47 - 47.5 mg/kg	91.3 mg/kg	2 of 3
Zinc	153 – 159 mg/kg	315 mg/kg	2 of 3

PEL-Probable Effects Level; UEL-Upper Effects Level